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Name of invention: magnetic card
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Detailed report

1. Name of patent
Magnetic card

2. Sphere of patent request

(Claim 1)

Claim 1 is concerning a magnetic card with multiple concentric circles or a spiral shaped magnetic recording strip arranged on the outer perimeter of the center part of card.

(Claim 2)

Claim 2 is concerning the magnetic card in claim 1 where both sides are coated and a magnetic recording strip is arranged on both sides.

3. Detailed explanation of the new utility idea

(Field of industrial use)

This invention is concerning a magnetic card which records information by magnetism such as a telephone card or a CD card. In more detail, it is concerning a telephone card and a boarding pass for the railroad.

(Problem that this invention tries to solve)

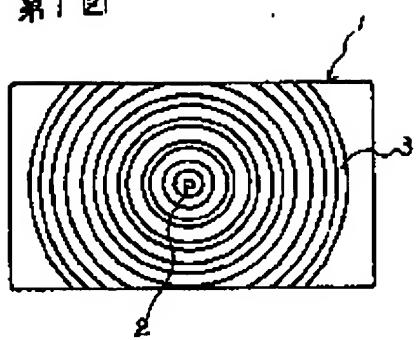
CD cards have been widely used for ATM machines, IC memory cards which contain a huge amount of information, pre-paid cards for public phones or ticket vending machines for the railroad, etc. A CD card is suitable for reading information - however, it is unsuitable for writing information each time to the card itself.

You can input a large amount of information to an IC card. Not only that, it is easy to input information or to change it. On the other hand, its price is very high. As a matter of fact, it costs 200 to 300 times as much as a CD card or pre-paid card. Therefore, its use has not been generally widespread. Meanwhile, a pre-paid card is easy to carry and handle, it is cheap, and information can be changed each time. On the other hand, information capacity is limited, and a large amount of information can not be stored.

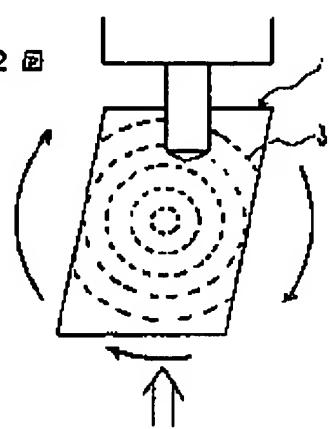
That is, on conventional pre-paid cards, the magnetic recording strip has been arranged in the lengthwise direction of the card. In order to read the magnetic record from this card and to change the information, a card reader is used. This card reader moves the magnetic recording strip parallel to the head so that the head can read the information from the magnetic record. It also lets it erase part of the information or change it. This head is fixed in order to read the magnetic information accurately. It also cannot be aligned at right angles to the direction of motion of the card. Consequently, only part of the card can be used for the magnetic recording part (approximately 5.5 %). Because of this, the amount of information is limited, and it has been impossible to increase it.

(Steps for solution)

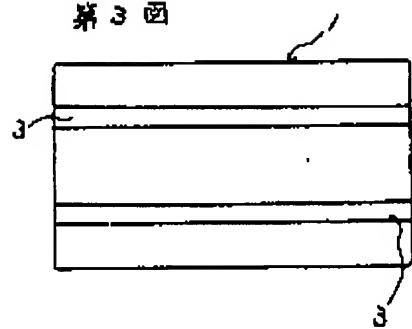
第1図



第2図



第3図



The object of this invention is to increase the magnetic recording area while leaving the easy handling and inexpensive price of this pre-paid card as they are. In addition, accuracy and speed of reading is the same as before while the card is fixed to the head. Multiple concentric circles or spiral shaped magnetic recording strips are arranged on the outer perimeter of the center part of the card and they are rotated during use.

(Function)

Therefore, according to this invention, this magnetic card is put inside the reader. The card reader has a rotation device which inserts an axis into an opening in the center of the card, and the card is rotated around this centering axis. According to this, the magnetic area moves parallel to the head while the card is rotated. A fixed head can read information from the entire magnetic recording part fast and accurately.

Because of this, 70 % of the magnetic card area can be used as the magnetic recording part. In addition, by coating both sides, twice as much capacity can be acquired.

(Example of practice)

One example of practice of this invention is going to be explained based on the figure. 1 is a vinyl chloride card which has been used formerly. An opening 2 is arranged in its center. Its outer perimeter has multiple concentric circular magnetic recording strips 3 approximately 7 mm wide with the same distance between them. A plastic coating is applied on top of the strips.

While the magnetic recording strip is shown in the figure, it cannot be seen by the naked eyes. The figure shows concentric circles around the opening 2 in the center. However, it can be a spiral shape. In addition, if a coating is applied to both sides, it is possible to arrange a magnetic recording strip on both sides.

The center of the card also has an opening 2 for the rotation axis inside the reader (not shown in the figure). However, this hole is not necessary as long as the card can be fixed to the rotating part of the reader securely. In the figure, 4 is the fixing head.

(Effects of this invention)

As stated above, compared to magnetic card of prior art, this invention provides 10 to 20 times more capacity. Not only that, the cost is almost the same as a conventional one. Its practical value is huge.

4. Simple explanation of figures

Figure 1 to figure 3 show one example of practice of this invention. Figure 1 is a front view which shows the magnetic recording position. Figure 2 is a cross section which shows one example of practice. Figure 3 is a front view which shows the magnetic recording strip of the prior art.

1: card, 2: opening, 3: magnetic recording strip

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